Stat 280
Spring 2015
Syllabus

1. **Times and places:**
   - Class meets MWF at 1 PM; location Sewall 305
   - Labs: W 4:30-6:30pm

2. **Text:** Introduction to the Probability and Statistics - Mendenhall, Beaver, and Beaver. 14th Edition.

3. **Instructor:** Kalatu R. Davies, PhD
   - office: DH 2088
   - office hours: MWF 2-3 pm and by appointment
   - email: kdavies@rice.edu; kalatu@gmail.com

4. **Course components.**
   - **Lectures.** I will assume you have completed all reading assignments and tutorials outside of class. Lectures will be used for: 1) responding to student questions 2) working problems 3) expanding on the more difficult material in the readings and 4) extra material not covered in the text.
   - **Labs.** Labs will be used to make sure you have the skills to work problems for homework and exams. Labbies will assist you with your homework and demonstrate how to use software to work problems. They will also answer questions about lecture material.
   - **Reading assignments.** There will be assigned readings from the text each week.
   - **Tutorial materials.** In additional to readings from the textbook, there will be written and video tutorials. These tutorials will primarily be used to teach software skills.
   - **Homework assignments.** There will be weekly homework assignments. These will be posted to Owlspace. I will try to remember to mention them in class, but it is your responsibility to check Owlspace. The assignments are due whether I remember to announcement them in class or not. Usually, I will make an assignment on Monday of each week; the assignment will be due the following Monday. This schedule will be modified for holidays. Your lowest homework score will be dropped.
     Homework should be submitted electronically as a single file. The purpose of homework is to learn and practice the material covered in lectures and the text. You may use whatever resources you and helpful to work the assignments, including other students and the Web. However, you must turn in your own work. Submissions which are copies of another student's work will be considered a violation of the Honor Code.
     Late submissions will not be accepted.
   - **Quizzes:** Online quizzes will be given to help you review material and prepare for exams.
   - **Exams.** There will be two exams, a midterm and comprehensive final. The final is not optional. Please check the dates for the final exam before making any travel arrangements.
   - **Course project.** There will be a group project with a written and oral component. A detailed rubric will be provided. The purpose of this project is to provide real-world research, team work, and apply critical thinking and data analysis skills.

5. **Owlspace.** We will make extensive use of Owlspace. All class material will be posted there. All homework will be submitted through Owlspace. I will make important announcements using Owlspace.

6. **Grading.** Your final grade will be based on homework (10%), quizzes (10%), course project (10%) and exams (70%). The midterm exam will contribute 30% of your grade and the final will contribute 40%. Grades will be curved at the end of the semester. No more than 10% of the class will receive an A+ and no more than 30% of the class will receive A or A-. This policy is meant to help insure similar grades across sections taught by different instructors and is being implemented in a number of introductory classes in the Department of Statistics.

7. **Software.** We will use both Excel and the R programming language for this class. Both of these systems will be covered in labs and tutorials. No previous experience with either package is required or expected.

8. **Getting help.** You are encouraged to ask questions both in class and during labs. I will also hold regular office hours and will respond to emails.

9. **Course Outline.** This is a rough outline of the material. This may be adjusted depending on how the class progresses.
   (a) Week 1 1/12 - 1/16: Chapter 1 – graphs
   (b) Week 2 1/19 - 1/23: Chapter 2 - numerical summaries
   (c) Week 3 1/26 - 1/30: Chapter 3 - bivariate data
   (d) Week 4 2/2 - 2/6: Chapter 4 – probability
   (e) Week 5 2/9 - 2/13: Chapter 5 - discrete distributions
   (f) Week 6 2/16 - 2/20: Chapter 6 - the normal distribution
   (g) Week 7 2/23 - 2/27: review and test 1
   (h) Break 3/2 - 3/6: Spring Break
   (i) Week 8 3/9 - 3/13: Chapter 7 - sampling distributions
   (j) Week 9 3/16 - 3/20: Chapter 8 - large sample estimation
   (k) Week 10 3/23 - 3/27: Chapter 9 - large sample tests of hypotheses
   (l) Week 11 3/30 - 4/3: Chapter 9 continued; Chapter 10 - inference from small samples
   (m) Week 12 4/6 - 4/10: Chapter 10 continued
   (n) Week 13 4/13 - 4/17: Chapter 12 - linear regression and correlation
   (o) Week 14 4/20 - 4/24: review and project presentations
   (p) Comprehensive final exam (mandatory)

10. If you know that you will be gone due to social school activities, contact me before your absence to make arrangements for any homework, labs, or tests during your absence.

11. If you have a disability that requires accommodation, please contact both me and Disability Support Services in Allen Center. Possible accommodations include, but are not limited to, extra time for tests, special settings for tests, the services of a note taker, and permission to record lectures. I will treat your request as confidential and make the accommodation as confidential as is practically possible.

Purposes of class. This course is meant to give you a solid grounding in the basic principles of statistical analysis. Topics include descriptive statistics, basic probability, probability distributions, confidence intervals, significance testing, simple linear regression and correlation, and association between categorized variables. At the end of this course:

- You will understand the basic principles which underlie all statistical analyses.
- You will be able to perform a range of basic statistical analyses.
- You will be able to understand the ideas behind more advanced analyses, even if you do not completely understand all the details of the analyses or are not able to perform them yourself.
- You will be able to consult selectively with an expert statistician if the need arises in your work for the use of advanced techniques.